

## Koch, Kristine

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**From:** POULSEN Mike <POULSEN.Mike@deq.state.or.us>  
**Sent:** Thursday, May 21, 2015 5:30 PM  
**To:** Koch, Kristine  
**Cc:** Allen, Elizabeth; MCCLINCY Matt  
**Subject:** RE: TPH Fractions in PH Groundwater Data

Kristine -

We may want to talk to make sure we are providing you with the key information that you need. In the interim, I can add some more supporting information for the aromatic fractions, referring to the criteria used in the BERA to identify the C10-12 TPH fraction as ecologically significant (BERA Table 11-5).

- \* Relatively high HQ in one or more media - The higher molecular weight aromatic fractions have HQs exceeding 100 in various monitoring wells, up to a maximum (for a single fraction) of 400.
- \* Potentially unacceptable risks over extensive areas - The contamination from the Gasco site covers a large area of the river. There is also contaminated groundwater associated with the Arco/BP site. TPH fractions were not analyzed in groundwater TPH plumes from other TPH sites (including bulk terminal sites), so we expect there may be additional areas of the river that are impacted by TPH fractions.
- \* Potentially unacceptable risks to multiple receptors - Similar to the aliphatic fraction, the higher molecular weight aromatic fractions have unacceptable risk to benthic macroinvertebrates, invertivorous and omnivorous fish, amphibians, and aquatic plants.
- \* Potentially unacceptable risks to multiple lines of evidence - Also similar to the aliphatic fraction, the aromatic fractions have other lines of evidence, such as benthic toxicity results.

The Gasco groundwater data was provided to us in a database. We evaluated the data and prepared the summary figures we included in the email. We understand that data tables will provide more meaningful support for our evaluation. We are in the process of preparing those tables, and will try to provide them by next Tuesday.

Please call me or Matt if you would like more clarification.

- Mike

-----Original Message-----

From: Koch, Kristine [mailto:Koch.Kristine@epa.gov]  
Sent: Thursday, May 21, 2015 1:49 PM  
To: MCCLINCY Matt; Allen, Elizabeth  
Cc: POULSEN Mike  
Subject: RE: TPH Fractions in PH Groundwater Data

Thanks Matt. For us to use this in the FS, we need for you to demonstrate how these particular fractions posed ecologically significant risks per the criteria described in the BERA. We also need the background calculations for the derivation of the HQs.

Thanks,

Kristine Koch  
Remedial Project Manager

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U. S. Environmental Protection Agency

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-----Original Message-----

From: MCCLINCY Matt [mailto:MCCLINCY.Matt@deq.state.or.us]

Sent: Thursday, May 21, 2015 11:40 AM

To: Koch, Kristine; Allen, Elizabeth

Cc: poulsen.mike@deq.state.or.us

Subject: FW: TPH Fractions in PH Groundwater Data

Hi Kristine and Elizabeth,

Attached is the TPH fraction evaluation of upland groundwater TPH plume data. Thank you for your patience. Please let me or Mike Poulsen know if you have any questions.

Matt McClincy

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